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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,073	07/30/2007	Joachim Lohr	L7725.06118	2010

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EXAMINER
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BALAOING, ARIEL A

ART UNIT	PAPER NUMBER
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2617

MAIL DATE	DELIVERY MODE
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04/21/2011

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/588,073	<b>Applicant(s)</b> LOHR ET AL.	
	<b>Examiner</b> ARIEL BALAOING	<b>Art Unit</b> 2617	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2011.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 38-59,61-63 and 75 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 38-45,48-54,58,59,61-63 and 75 is/are rejected.
- 7) ☒ Claim(s) 46,47 and 55-57 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 June 2010 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Specification*

1. The amendment filed 01/13/2011 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

[0159] Considering the exemplary case where a single base station is responsible of scheduling the uplink transmissions of the mobile terminal in soft handover, this base station may select a maximum amount of uplink resources for the mobile terminal and may allocate the maximum amount of uplink resources to same. Further, the base station may indicate the selected maximum amount of uplink resources to a network entity controlling radio resources of the mobile terminal which decides whether to provide the other base stations communicating with the mobile terminal with information on maximum amount of uplink resources allocated to the mobile terminal, **applicable to E-DCH**, by the scheduling controlling base station.

[0160] The selection and allocation of the maximum amount of uplink resources allocatable to the mobile terminal, **applicable to E-DCH**, may be for example a part of the scheduling controlling NodeB's TFCS control. In the present UTRAN architecture, the radio network controlling entity is the S-RNC. Alternatively~ when considering the evolved UTRAN architecture the serving NodeB may control radio resources of the mobile terminals.

[0 161] Another embodiment considers the possibility that all base stations communicating with the mobile terminal during soft handover may actively schedule uplink transmissions from the mobile terminal. Hence, the different base stations may decide to allocate different maximum amounts of uplink resources to the terminal, **applicable to E-DCH**, resulting in the undesirable effects on the RoT as described previously. In this embodiment of the invention, the base stations (or at least those who schedule transmissions on the uplink), may inform the radio resource control entity on the maximum amount of uplink resources allocated by each of the base stations to the mobile terminal.

[0162] The radio resource control entity may use different strategies to select one appropriate amount of uplink resources allocatable to the mobile terminal, **applicable to E-DCH**, by all the base stations in communication with the mobile terminal. This selected amount of uplink resources may then be provided to the individual base stations which may use this information for scheduling the mobile terminals the respective base station is responsible for.

Applicant is required to cancel the new matter in the reply to this Office Action.

### ***Response to Arguments***

2. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

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1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 38-41,44,45,48-54,59, 61, 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over RANTA-AHO et al (US 2005/0048975) in view of TIEDEMANN et al (US 2005/0037771 A1).

Regarding claim 38, RANTA-AHO discloses a method for communicating information relating to the scheduling of uplink data transmissions, wherein a mobile terminal transmits uplink data via a channel to a plurality of base stations [**Node B's**] during soft handover of the mobile terminal [**UE device**] in a mobile communication system, and wherein at least one scheduling base station of said plurality of base stations schedules uplink data transmissions of the mobile terminal in soft handover (abstract; paragraph 4; active node B provides scheduling of uplink data rate to the UE), the method comprising: determining, at the at least one scheduling base station of said plurality of base stations, scheduling information for the mobile terminal indicative of an allocated maximum amount of uplink resources for the mobile terminal applicable to processes to scheduled uplink data transmission on the channel (paragraph 13, 14; serving NodeB includes a pointer indicating maximum uplink data rate. During soft handover, uplink connection established for a plurality of nodes and therefore include a plurality of processes), informing at least one other base station of said plurality of base stations on the applicability of allocated maximum amount of uplink resources for uplink data transmissions on the channel (paragraph 13, 14, 16; during soft handover, uplink data rate is updated of target Node B including synchronization of pointer in UE and

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target Node B), and scheduling, by the at least one other base station (paragraph 16, 19, 21; uplink resources are scheduled to the UE based on determined maximum uplink data rate). However, RANTA-AHO does not expressly disclose transmitting from at least one scheduling base station information to at least one other base station of said plurality of base stations; and wherein the scheduling is based on the information received from the scheduling base station. In a similar field of endeavor, TIEDEMANN discloses transmitting from at least one scheduling base station information to at least one other base station of said plurality of base stations, and wherein the scheduling is based on the information received from the scheduling base station (paragraph 31, 42, 93, 96; non serving base station schedules a plurality of mobile stations according to an expected load based on determined reverse link resources of mobile stations in soft handover through back haul network). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify RANTA-AHO to include the teachings of TIEDEMANN, since TIEDEMANN states that such a modification would allow a system to predict changes of a load capacity and optimize base station operations based on these predictions (see paragraph 4). Furthermore, providing resources to a newly added device at a base station would inherently change the amount of resources available to current devices, and therefore would affect the base stations scheduling of additional resources. However, the combination of RANTA-AHO and TIEDEMANN does not expressly disclose wherein the channel is an enhanced uplink dedicated channel. The examiner takes Official Notice that the use of an enhanced uplink dedicated channel is well known and conventional in the art and

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would allow transmission of data using known and standardized technologies.

Furthermore, as both an uplink channel (as described in the combination of RANTA-AHO and TIEDEMANN) and an enhanced uplink channel provide data between a mobile terminal and base station, the use of any uplink channel would be design choice based on system needs.

Regarding claim 39, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of RANTA-AHO and TIEDEMANN further discloses further comprising the step of signaling by said at least one scheduling base station the determined scheduling information to the mobile terminal in soft handover to allocate the maximum amount of uplink resources to the mobile terminal for uplink data transmissions on the E-DCH (RANTA-AHO - paragraph 29, 30).

Regarding claim 40, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of RANTA-AHO and TIEDEMANN further discloses wherein the maximum amount of uplink resources applicable on the E-DCH used for uplink data transmissions indicates the maximum data rate or the maximum uplink transmission power ratio that may be used by the mobile terminal for uplink transmissions using the E-DCH (RANTA-AHO - paragraph 30).

Regarding claim 41, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of RANTA-AHO and TIEDEMANN further discloses wherein the at least one scheduling base station

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schedules uplink data transmissions by controlling the TFCS available to the mobile terminal in soft handover for uplink data transmission or by controlling the uplink transmission power ratio of the mobile terminal (RANTA-AHO - Figure 1; paragraph 3, 32).

Regarding claim 44, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of RANTA-AHO and TIEDEMANN further discloses wherein the indicated allocated applicability of maximum amount of uplink resources for uplink data transmissions on the E-DCH is transported using control signaling (RANTA-AHO - paragraph 30; scheduling command).

Regarding claim 45, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of RANTA-AHO and TIEDEMANN discloses wherein the scheduling base station determines, signals and indicates the applicability of allocated maximum amount of uplink resources for uplink data transmissions on the E-DCH for the mobile terminal in soft handover each time the mobile terminal in soft handover is scheduled (RANTA-AHO - paragraph 34; control base stations indicates scheduling during handover).

Regarding claim 48, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of The combination of RANTA-AHO and TIEDEMANN further discloses wherein the plurality of base stations defines the active set of the mobile terminals in soft handover and wherein the method further comprises the steps of adding a base station to the active set of the mobile terminals and signaling the applicability of allocated amount of uplink resources for uplink data



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transmissions on the E-DCH for the mobile terminal in soft handover to said added base station by the serving radio network controller [**controller**] (TIEDEMANN - paragraph 38, 39, 44; active set of the mobile terminal based on sufficient signal measurements. Since measurements are provided to base stations in active set, newly added base stations would be provided resource information.

Regarding claim 49, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of The combination of RANTA-AHO and TIEDEMANN further discloses wherein information for signaling of the applicability of maximum amount of uplink resources for uplink data transmissions on the E-DCH to said added base station is comprised within a message communicated during the active set update procedure (TIEDEMANN - paragraph 38, 39, 44; when active set is updated, resource information can be provide to non-active base station on list.).

Regarding claim 50, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of RANTA-AHO and TIEDEMANN further discloses wherein one base station of said plurality of base stations schedules uplink data transmissions of the mobile terminal in soft handover to all base stations of said plurality of base stations (RANTA-AHO - paragraph 31; controlling scheduling cell controls the uplink data rate).

Regarding claim 51, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of RANTA-AHO and TIEDEMANN discloses wherein each of said base stations schedules uplink data

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transmissions of the mobile terminal in soft handover to the respective one of said plurality of base stations (TIEDEMANN - abstract; uplink resources controlled by each base station). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify RANTA-AHO to include the teachings of TIEDEMANN, since TIEDEMANN states that such a modification would improve efficiency of the system by reducing delays caused by communication with a central controller (see abstract).

Regarding claim 52, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of RANTA-AHO and TIEDEMANN further discloses wherein each of the plurality of base stations determines scheduling information for the mobile terminal indicative of an allocated maximum amount of uplink resources for uplink data transmission on the E-DCH allocated to the mobile terminal by the respective base station (TIEDEMANN - abstract), and signals the determined scheduling information to the mobile terminal in soft handover to allocate the maximum amount of uplink resources for uplink data transmissions using the E-DCH to the terminal for uplink data transmission to the respective base station (RANTA-AHO - paragraph 29, 30).

Regarding claim 53, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of RANTA-AHO and TIEDEMANN further discloses choosing by a mobile terminal the lowest assigned maximum amount of uplink resources for uplink data transmission using the E-DCH for

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uplink transmissions to all base stations of the plurality of base stations (paragraph 29, 30; lowest assigned maximum corresponds to maximum uplink rate).

Regarding claim 54, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of RANTA-AHO and TIEDEMANN further discloses further comprising the step of forming by the mobile terminal a combined maximum amount of uplink resources on the assigned maximum amounts of uplink resources for uplink data transmissions using the E-DCH, which is used by the mobile terminal for uplink transmissions to all base stations of the plurality of base stations (paragraph 29, 30; maximum uplink rate set by the controlling Node B).

Regarding claim 59, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of RANTA-AHO and TIEDEMANN further discloses wherein the maximum allocated amount of uplink resources for uplink data transmissions on the E-DCH is signaled from a base station to the mobile terminal via a shared channel or a dedicated channel (TIEDEMANN – paragraph 27; forward link would inherently require a shared or dedicated channel for wireless transmission).

Regarding claim 61, RANTA-AHO teaches a mobile communication system communicating information relating to the scheduling of uplink data transmissions, wherein the communication system comprises: a mobile terminal [**UE device**] that uses a plurality of processes to transmit uplink data on a channel of a system to a plurality of base stations [**Node B**] during soft handover of the mobile terminal in the mobile communication system, and said plurality of base stations, wherein at least one

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scheduling base station of said plurality of base stations schedules uplink data transmissions of the mobile terminal in soft handover (abstract; paragraph 4; active node B provides scheduling of uplink data rate to the UE), wherein the at least one scheduling base station of said plurality of base stations determines scheduling information for the mobile terminal indicative of an allocated maximum amount of uplink resources used for uplink data transmission for the mobile terminal and is operable to inform at least one other base station of the plurality of base stations of the allocated maximum amount of uplink resources for uplink data transmissions on the individual processes (paragraph 13, 14; serving NodeB includes a pointer indicating maximum uplink data rate), and wherein the at least one other base station schedules at least one other mobile terminal in communication with a respective base station (paragraph 16, 19, 21; uplink resources are scheduled to the UE based on determined maximum uplink data rate). However, RANTA-AHO does not expressly disclose transmitting from at least one scheduling base station information to at least one other base station of said plurality of base stations; and scheduling at least one other mobile terminal in communication with a respective base station based on the information received from the at least one scheduling base station. In a similar field of endeavor, TIEDEMANN discloses transmitting from at least one scheduling base station information to at least one other base station of said plurality of base stations, and scheduling at least one other mobile terminal in communication with a respective base station based on the information received from the at least one scheduling base station (paragraph 31, 42, 93, 96; non serving base station schedules a plurality of mobile stations according to an

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expected load based on determined resources of mobile stations in soft handover).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify RANTA-AHO to include the teachings of TIEDEMANN, since TIEDEMANN states that such a modification would allow a system to predict changes of a load capacity and optimize base station operations based on these predictions (see paragraph 4). Furthermore, providing resources to a newly added device at a base station would inherently change the amount of resources available to current devices, and therefore would affect the base stations scheduling of additional resources. However, the combination of RANTA-AHO and TIEDEMANN does not expressly disclose wherein the channel is an enhanced uplink dedicated channel. The examiner takes Official Notice that the use of an enhanced uplink dedicated channel is well known and conventional in the art and would allow transmission of data using known and standardized technologies. Furthermore, as both an uplink channel (as described in the combination of RANTA-AHO and TIEDEMANN) and an enhanced uplink channel provide data between a mobile terminal and base station, the use of any uplink channel would be design choice based on system needs.

Regarding claim 62, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of RANTA-AHO and TIEDEMANN further discloses wherein the at least one scheduling base station transmits the determined scheduling information to the mobile terminal in soft handover to allocate the maximum amount of uplink resources to the terminal applicable to the HARQ processes used to uplink data transmissions (RANTA-AHO - paragraph 29, 30).

Regarding claim 63, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of RANTA-AHO and TIEDEMANN further discloses wherein the other base stations of said plurality of base stations schedule at least one other mobile terminal in communication with a respective base station taking into account the indicated applicability to the E-DCH for said mobile terminal in soft handover (TIEDEMAN - paragraph 93, 96).

3. Claims 42, 43, 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over RANTA-AHO et al (US 2005/0048975) in view of TIEDEMANN et al (US 2005/0037771 A1) and further in view of LEGG (6,414,947).

Regarding claim 42, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of RANTA-AHO and TIEDEMANN further discloses wherein indicating the allocated applicability of maximum amount of uplink resources for uplink data transmission on the E-DCH comprises: signaling the allocated applicability of maximum amount of resources from the at least one scheduling base and informing the allocated maximum amount of uplink resources for uplink transmissions on the E-DCH to the other base stations (RANTA-AHO – paragraph 29, 30). However, the combination of RANTA-AHO and TIEDEMANN does not expressly disclose wherein the indicated allocated maximum amount of uplink resources is transported via a resource network controller controlling radio resources of the mobile terminal in soft handover. In the same field of endeavor, LEGG discloses wherein an indicated allocated amount of uplink resources is transported via an radio network controller controlling radio resources of the mobile terminal in soft handover,

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and wherein indicating the allocated amount of uplink resources comprises the steps of: signaling the allocated maximum amount of resources from the at least one scheduling base station to a network entity controlling radio resources of said mobile terminal in soft handover, and forwarding the allocated maximum amount of resources to the other base stations by the radio resource controlling entity (col. 5, line 55-60; col. 6, line 15-34; resources allocated for a mobile in soft handover using associated cell determination information forwarded from the network controller). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the combination of RANTA-AHO and TIEDEMANN to include the teachings of LEGG, since the use of a network controller provides various configuration processing and coordination between various network elements and would allow control functions to be implemented between connected network elements.

Regarding claim 43, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of RANTA-AHO, TIEDEMANN, and LEGG further discloses wherein the serving radio network controller determines whether to forward the applicability of allocated maximum amount of uplink resources for uplink data transmissions on the E-DCH to a respective one of said other base stations based on the cell interference within the radio cell controlled by the respective one of said other base stations (TIEDEMANN - paragraph 38, 39, 44; TIEDEMANN describes forwarding of information based on an Active base station set of the mobile station which is formed using signal strength indicators (i.e. interference), while LEGG teaches forwarding of information using a radio network entity).

Regarding claim 58, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. However, the combination of RANTA-AHO and TIEDEMANN does not expressly disclose further comprising requesting by a serving radio network controller from at least one base station of said plurality of base station to signal the maximum amount of resources allocated to the mobile terminal in soft handover to said radio resource controlling entity. In a similar field of endeavor, LEGG teaches requesting by a Radio Network Controller controlling the radio resources of a mobile terminal in soft handover from at least one base station of a plurality of base station to signal the maximum amount of resources allocated to the mobile terminal in soft handover to said Radio Network Controller (col. 5, line 55-60; col. 6, line 15-34; resources allocated for a mobile in soft handover using associated cell determination information forwarded from the network controller). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the combination of RANTA-AHO and TIEDEMANN to include the teachings of LEGG, since the use of a network controller provides various configuration processing and coordination between various network elements and would allow control functions to be implemented between connected network elements.

4. Claim 75 is rejected under 35 U.S.C. 103(a) as being unpatentable over RANTA-AHO et al (US 2005/0048975) in view of TIEDEMANN et al (US 2005/0037771 A1) and further in view of LOVE (US 2004/0219920).

Regarding claim 75, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of RANTA-AHO and



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TIEDEMANN, does not expressly disclose wherein the uplink maximum transmission power ratio is a maximum power ratio of a data channel to a control channel for uplink transmissions. In a similar field of endeavor, LOVE discloses wherein an uplink maximum transmission power ratio is a maximum power ratio of a data channel to a control channel for uplink transmissions (paragraph 50, 51). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the to include the teachings of combination of RANTA-AHO and TIEDEMANN to include the teachings of LOVE since such a modification would allow a system to maintain interference levels by reducing power based on a signal to noise ratio.

***Allowable Subject Matter***

5. Claims 46, 47, 55-57 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 1st paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Claims 46, 47, 55-57 are allowable in view of the reasons for allowance stated in the Office Action filed 03/10/2009.

***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ARIEL BALAOING whose telephone number is (571)272-7317. The examiner can normally be reached on Monday-Friday from 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dwayne Bost can be reached on (571) 272-7023. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ariel Balaoing/  
Examiner, Art Unit 2617

/A. B./  
Examiner, Art Unit 2617